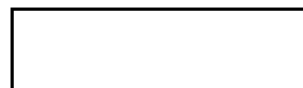


25X1



7 April 1971

Copy \_\_\_\_\_

25X1

MEMORANDUM FOR: Chief, Technical Services Group, NPIC

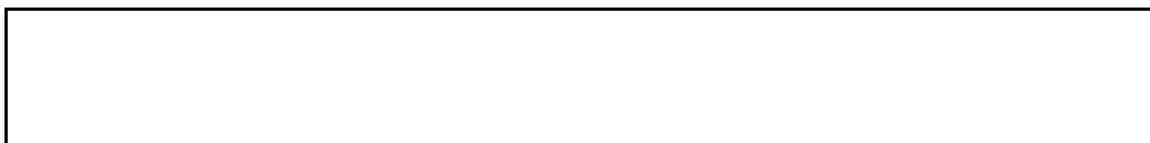
ATTENTION : Chief, PPS/TSG

SUBJECT : RED Monthly Report (March 1971)

Significant Items of Interest for March 1971:

1. Automatic Stereo Scanner - The engineering audit [ ] is being further reviewed. Recommendations relative to future action on the A.S.S. will be forthcoming shortly.

25X1A



25X1D

3. Wide-Field, High-Power, Anamorphic Stereoviewer - The final optical and mechanical design report has been reviewed by RED and by our optical consultant. Project optical performance figures appear to exceed our original development objective. We are recommending [ ] complete the project in two stages: a complete test of the optical system on the bench and, if this is successful, final fabrication and assembly of the prototype. Projected delivery date is April 1972.

25X1A

4. Image Comparison Microstereoscope - Completion of the prototype is now proceeding with delivery projected for mid-summer.

5. 10" x 10" Stage Stereo Comparator - The technical monitor and [ ] (NPIC optical consultant) visited [ ] to review the optical design of the comparator. No major problems were encountered.

25X1A

25X1A

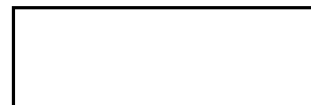
6. Scan & Search P.I. Station [ ] Project Manager visited [ ] the optical subcontractor, and reports that the optical work is a little ahead of schedule. The optical system may be ready for acceptance tests in July 1971.

25X1A

25X1A

7. High Precision Stereo Comparator [ ] has been disassembling the HPSC prior to shipping to NPIC. The cables were shipped 24 March and arrived at NPIC the end of March. The main comparator system and the optical system will be shipped in April.

25X1A



25X1

8. Step & Repeat Printer Preliminary Design - Change-in-scope  
[redacted] for a densitometric readout system was approved. The preliminary design study will be completed in mid-April 1971.

9. UV Rear Projection Viewer Breadboard - This device was tested [redacted] and met the performance specifications of the contract. One of the features of this technique is that up to 200 line pairs per millimeter resolution can be presented at the viewing screen. This device will be demonstrated to NPIC personnel during May 1971.

10. Dry Silver, Negative Acting Film - RED joined the [redacted] and Air Force personnel in the testing of this material at Westover SPPF. All the data has not been reduced at this time, but the new data is very encouraging. The low contrast resolution in the static mode was 200 line pairs per mm and, in the dynamic mode, 180 line pairs per mm.

11. Room Light Enlarger/Reader/Printer - The fabrication of this instrument, which utilizes dry silver paper, is nearing completion. Manufacturing acceptance tests will be performed at the [redacted] plant during the latter part of April 1971.

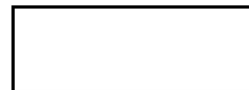
12. Simulated Imagery Program - This program has been in limbo for the past few months awaiting the repair of the [redacted] Plotter at NPIC. Work has now resumed and should be completed in 60 days.

13. Vibration Isolation of the [redacted] Light Table - A [redacted] light table has now been obtained for use by [redacted] in their Vibration Analysis. A Zoom [redacted] microstereoscope is also to be provided the contractor and work will commence the last week of March.

14. Research in Mensuration Instrument - All but one task has now been completed. The Automatic Pointing Technique was demonstrated to TSG/APSD and IEG/PHD representatives.

15. Optical Power Spectrum (OPS) as a Measure of Image Quality - The [redacted] arrangements [redacted] to pursue the OPS image quality project were completed [redacted] has subcontracted the software changes required [redacted] while performing the experimental design and data analysis functions themselves. Preliminary data using [redacted] imagery has been collected and is now being evaluated.

16. Digital Image Processing [redacted]  
The DIM contract [redacted] has been signed. A new video display device is now being installed at the OCS computer center and will be ready for testing late this month [redacted] will participate at Headquarters in the initial testing of operational imagery during the week of 19 April 1971.



25X1

25X1

17. The [ ] Fabricated Precision Grids for DIA on a Special Request Basis - The two master grids developed were given to DIA in order that they may satisfy their own requirements in the future.

18. Experimental Design Support (Operations Division/IEG and Applied Photo-Science Division/TSG) - HFS [ ] personnel devised and assisted in the conduct of a pilot study to evaluate a number of new dupe emulsions and reproduction processes. An analysis of the results of a PI readout and subjective comparison of the emulsions was completed. Current activity is devoted to completing the design of a comprehensive interpretation, and photogrammetric and photo-scientific evaluation of the products. The effort is in reply to a request by the CCB.

25X1A

25X1



20. Power Spectral Density Quality Measure [ ] A contract amendment has been requested [ ] to provide human factors support to ATB/ITL research of the relationship of the Optical Power Spectrum (OPS) to PI judgments of image quality.

25X1A  
25X1A

21. Closeout of Target Sampling Study [ ] Following a series of meetings with ICRS, COMIREX, and IEG personnel, the project monitor halted further work in the Target Sampling Study due to a lack of sufficient basic data with which to conduct the study. Discussions will be held soon with the Contracting Officer to redirect the effort.

25X1A

25X1A

22. EOI Support [ ] Extensive literature has been provided the Center's EOI Task Team relative to the effect of photographic scale on interpretability.

23. Edge Training Results Evaluation [ ] Data from the Photogrammetry Division/IEG Edge Training Program was submitted to the contractor for analysis. This marks the first large-scale application of the photogrammetrists' training package designed [ ] during the FY-70 Imagery Interpretation Research Program.

25X1A

25X1A

25X1

25X1A

24. P.I. Target Training [ ] An assessment of the advantages and disadvantages of self-instruction training packages versus use of PI keys, annotated imager, and detailed reports as training devices was completed. In light of the self-instruction concept's clear superiority over the alternatives, IEG has approved development of additional packages.

25X1

25X1

25. [ ] personnel finished colorimetric and densitometric measurements on [ ] film samples for Color Gamut Statistical Validation Data Reduction.

26. The ORD/DDS&T sponsored reconnaissance system continued its test flight program. The first payload flight was made on 10 March. NPIC provided support in imagery reproduction, imagery evaluation, and the production of briefing materials. RSB/RED is coordinating this and future test flights for NPIC.

25X1A

27. Preparation for [ ] test flights neared completion with the plotting of the final mission tracks and the solution of the problems of reproducing the imagery.

28. Evaluations:

25X1A

25X1A

a. [ ] was authorized to work on two work orders: (1) [ ] Tintometer Evaluation, and (2) Color Image Reconstruction.

25X1

b. [ ] completed an in-house evaluation of the resolution of two [ ] Dry Silver duplicating films. The latest coating (Lot 51) had an improved resolution over the older dry silver material and was also somewhat better than [ ] film.

25X1A

25X1

25X1A

25X1A

c. [ ] report on the Evaluation of the [ ] Color Toning Process was received and is in evaluation. Interest lies in exploring the potential of this process as a technique for manipulating color imagery through false color rendition of [ ] color transparencies. This work was performed under the Photoscience Support Program.

25X1A

25X1

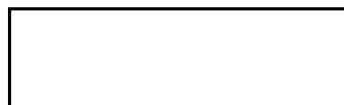
25X1

25X1A

d. [ ] Evaluation of "A Review of Color Science and Color Aerial Reconnaissance" - An intensive evaluation of a draft of [ ] "handbook" has been completed by the Vision Committee, National Research Council, and submitted to the project monitor. The document was produced under ATB/RED's Color Training contract [ ] Additional evaluations were conducted by IEG and TSG personnel.

25X1A

25X1A



25X1

29. Meetings, Briefings, etc.:

25X1A

- a. [redacted] attended several meetings at the DDS&T on a special project.

25X1

- b. [redacted] representatives visited [redacted] during the reporting period.

25X1A

25X1A

- c. Chief/TSG, along with RED and ESD personnel, met [redacted] to review the study of vibration problems [redacted]

25X1A

25X1A

- d. On 10 March, RED hosted visitors from SAC 544th RTC and FTD.

25X1A

- e. RED/SDB and ATB personnel visited [redacted] to inspect a variable color light table built [redacted]. The contractor has been invited to demonstrate the table at NPIC.

25X1

25X1A

25X1A

- f. Company capabilities were presented [redacted]

25X1A

25X1A

- g. [redacted] participated as the NPIC representative in a program review of the Air Force contract with [redacted]

25X1A

A wide variety of projects were presented for consideration by the review board. Those selected for inclusion in the FY-72 program were very specific in nature. This represents a fundamental change in Air Force policy which, heretofore, had allowed the Optical Sciences Center a wide latitude in the selection of research projects. It was the consensus of the review board that this revised policy reflected a trend that was consistent with the current austere R&D environment.

- h. ATB and SDB personnel visited Westover AFB to witness testing and printing of the latest dry silver material for the in-house PI evaluation of unconventional materials.



25X1

i.



25X1A

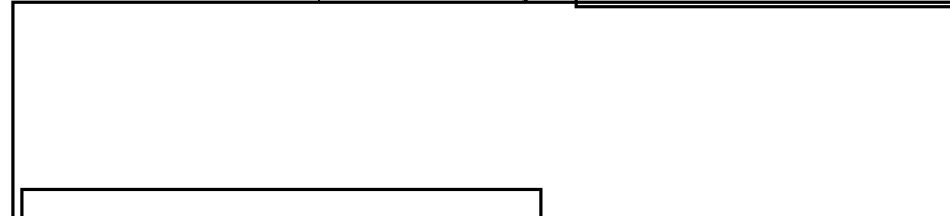
j.

[redacted] personnel visited [redacted] Chief, Optics/ORD/DDS&T, on 11 March and witnessed a demonstration of a scatter-light viewer and a multiple reflection viewer, both developed [redacted]

25X1A

25X1A

25X1A  
25X1D



k.

[redacted] Ch/PSD/OL, and members of his staff to discuss problems of effluent control from the Printing Services area. It was agreed that we would survey their work space, as well as NPIC's, as a preliminary to setting up joint contamination control efforts.

25X1A

l.

[redacted] Ch/CS/OMS, to discuss problems of chemical safety. At [redacted] request [redacted] obtained a list of consultants in the field of Chemical Safety and Environmental Control from [redacted] Administrator, Agricultural Research Service, Department of Agriculture, to obtain a nationally qualified person to sit on a senior board for the Agency.

25X1A

25X1A

25X1A

25X1A

m.

[redacted] briefed [redacted]  
[redacted]  
on the Automated Image Manipulation Program at NPIC.

25X1A

25X1A  
25X1A

25X1

25X1A

n. [ ] briefed EXRAND on the Color Gamut Technique.

o. Results from a preliminary study conducted by PSS/OMS and HFS/RED--an evaluation of the effects of military experience, educational background, general intellectual ability, age, and sex of the applicant upon scores on the Army PI Test Battery--were briefed to TSG and IEG management during the reporting period.

25X1A

p. [ ]

30. Training:

25X1A

a. [ ] spent one week [ ] on-the-job training on electron microscope techniques. Emphasis was placed on development of techniques for the examination of the surface of developed film.

25X1A

25X1A

b. [ ] attended a course on Industrial Noise and Vibration Control from 29 through 31 March 1971.

31. Personnel:

25X1A

[ ]

25X1A

[ ]  
Acting Chief,  
Research & Engineering Division,  
TSG/NPIC